Deep and Fragile Knowledge

Picture this: a student aces a quiz on state government and how a bill becomes a law. Does a perfect score reflect basic knowledge or deep understanding? How can teachers tell when students have a superficial understanding of material, and when they reach a deeper understanding?

In an ideal system of education, students understand, retain, and actively use the knowledge they acquire in the classroom. Because social studies entails creating effective citizens, the difference between superficial and deep understanding could mean the difference between students who understand the individual's role in a democratic society—and act on that understanding—and those who don't.

In his book *Smart Schools*, Harvard learning theorist David Perkins identifies signs that can help teachers recognize fragile knowledge, and when students have a deeper understanding of the concept being taught. By teaching for deep understanding, social studies teachers can ensure that students are more likely to apply what they know as effective citizens.

Elements of Fragile Knowledge

When students have fragile knowledge, they do not remember, understand, or actively use the information they learn in school, causing an inconsistency in academic performance. **Inert knowledge** allows students to remember information when tested, but does not give them the ability to apply it outside of the classroom. **Naïve knowledge** refers to knowledge that lets students rely on simple explanations or formulas to provide the answer, but doesn't require them to apply knowledge in flexible ways. **Ritual knowledge** is a substitution of routines that work well in a classroom for real knowledge; students go through the motions expected in school but see no applications to the world beyond the classroom.

Knowledge is fragile when students don't grasp meaning and cannot apply what is studied. For example, in social studies, students may be able to list the three branches of government and still not understand how they balance one another or how an individual citizen can take action.

Elements of Deep Understanding

Building deep understanding entails determining students' prior knowledge, linking new learning to previous learning, creating visual representations, and helping students move beyond acquiring knowledge to applying what they've learned. David Perkins's theory of **deep understanding** focuses on not only possessing knowledge, but also being able to think about, explain, and apply it beyond the classroom. Students demonstrate varying degrees of deep understanding by both the quality and quantity of **understanding performances**.

Understanding performances are the things students do to show what they've learned. They include, but are not limited to, students' ability to: **explain** the learned concept in their own words, give new **examples** that demonstrate knowledge, **apply** the knowledge to a concept that has not yet been studied, **justify** or support their positions, **compare and contrast** the material learned to previously studied material, use new knowledge in the **context** of the general subject area, and make **generalizations** related to the subject.

How do we tell when a student has moved beyond fragile knowledge to deeper levels of understanding? We analyze their performances of understanding. We listen to what they say, and examine the assignments they complete. We expect that they will be able to explain, give examples, and successfully apply what they have learned in new contexts. Finally they demonstrate a command of the material that goes beyond superficial understanding.

"Deep and Fragile Knowledge" is based upon the work of David Perkins.

Perkins, David. *Smart Schools.* New York: Simon and Schuster, 1993.